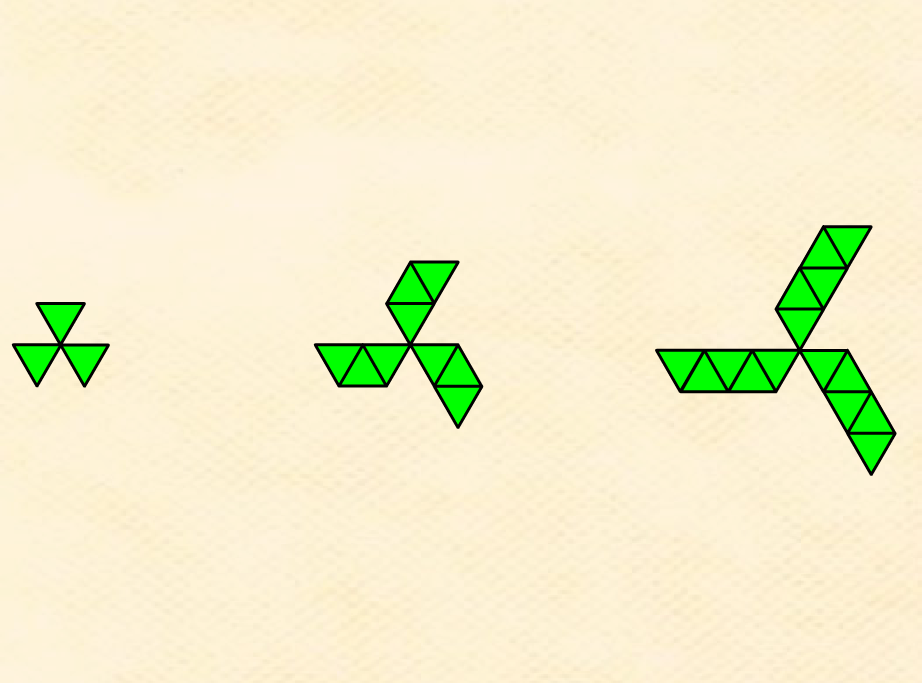
Name:

Date:

1. Here’s a pattern:



|  |  |
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| ***n*** | ***f*(*n*)** |
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a) Draw the next 3 steps of the pattern.

b) Make a table for the pattern for n from 0 to 6, and then 20 and 100.

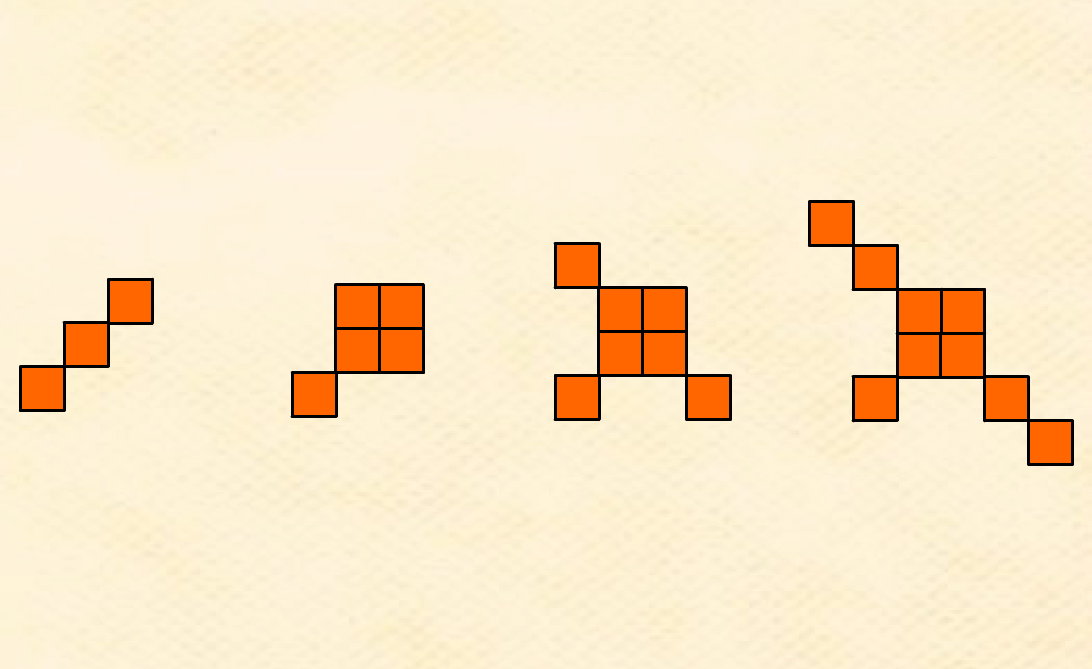
c) Write the rule for the pattern in words and as a “formula.” Connect both your verbal and algebraic descriptions to the actual pattern.

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d) Make a graphof the pattern.

e) What is the rate of change of this pattern? The starting point? How do those connect to the pattern itself?

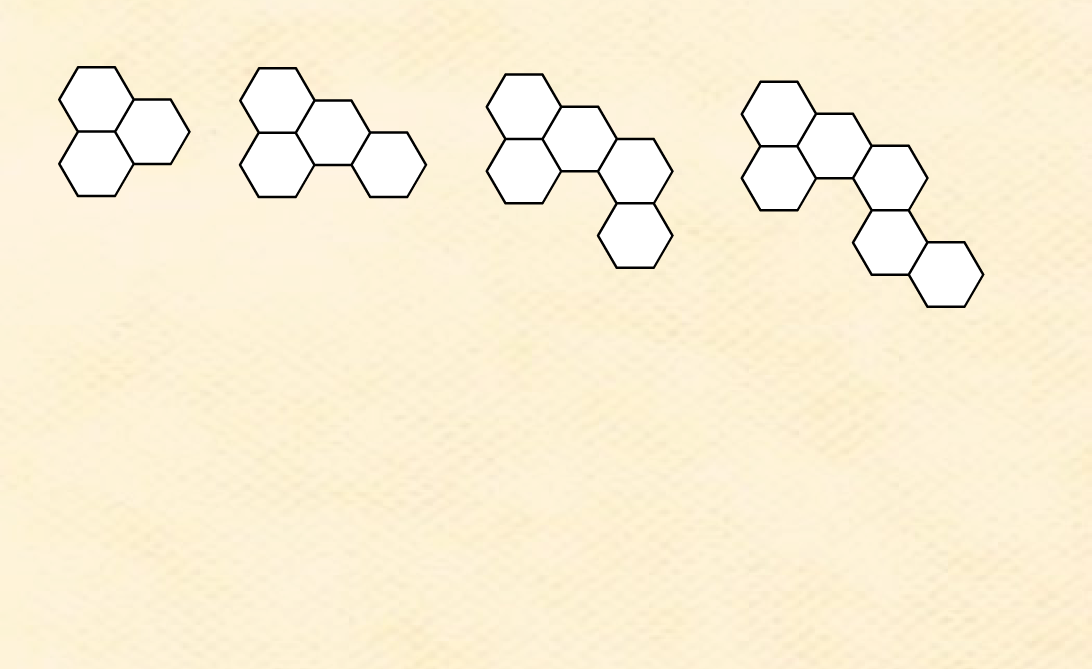
2. Repeat the process from #1 for this pattern:



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| ***n*** | ***f*(*n*)** |
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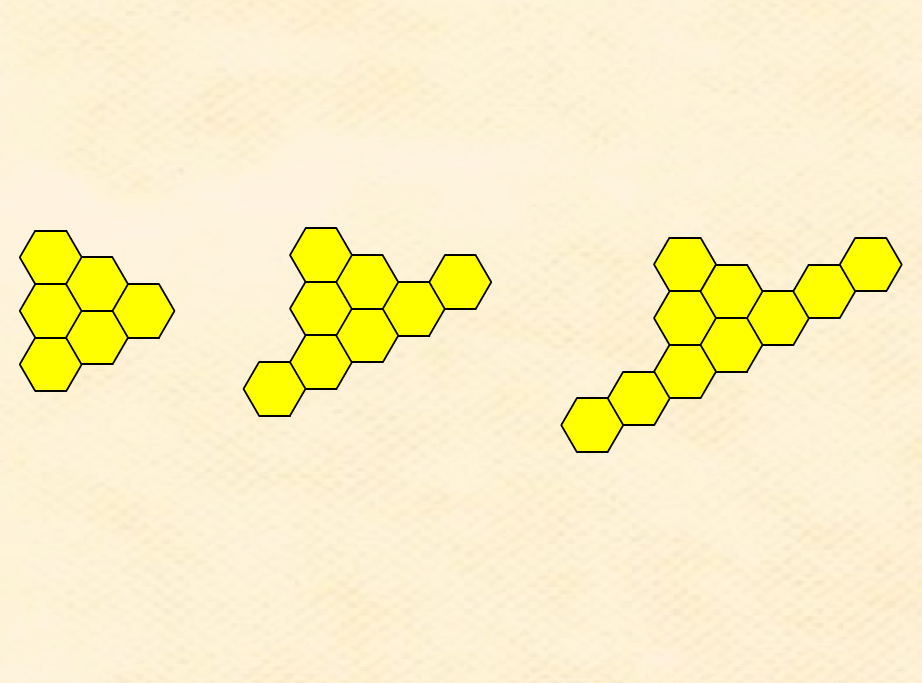
3. Repeat again for this pattern, except focus on the number of segments in each pattern, not the number of hexagons.

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| ***n*** | ***f*(*n*)** |
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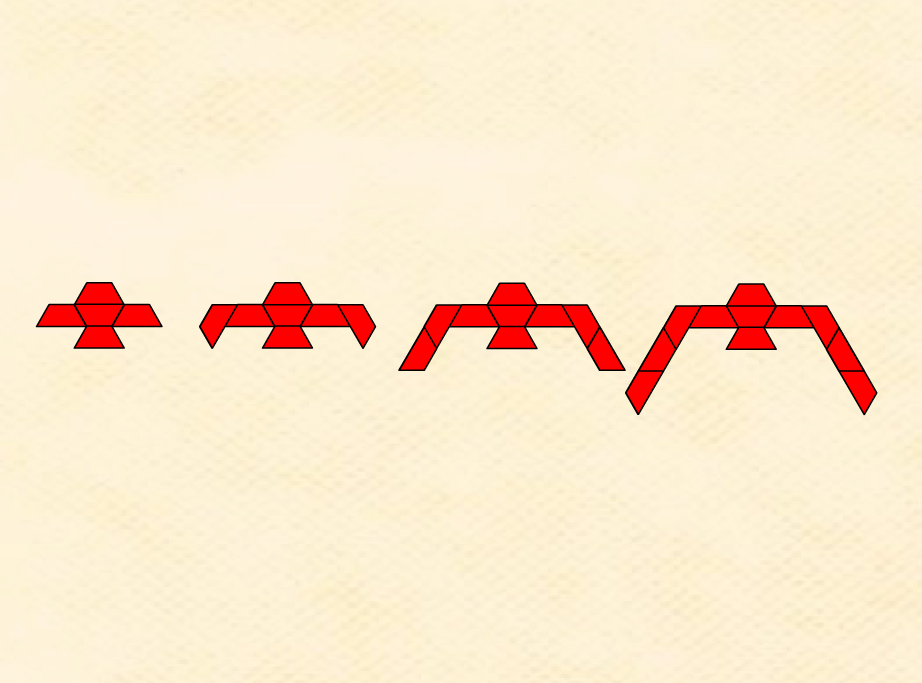


a) Draw what step 0would look like:

b) Figure out the rule for this pattern, and then connect that rule back to the pattern itself.

c) What step number has 108 hexagons in it?

5.

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a) Draw what step 0would look like:

b) Figure out the rule for this pattern, and then connect that rule back to the pattern itself.

c) What step number has 171 trapezoids in it?

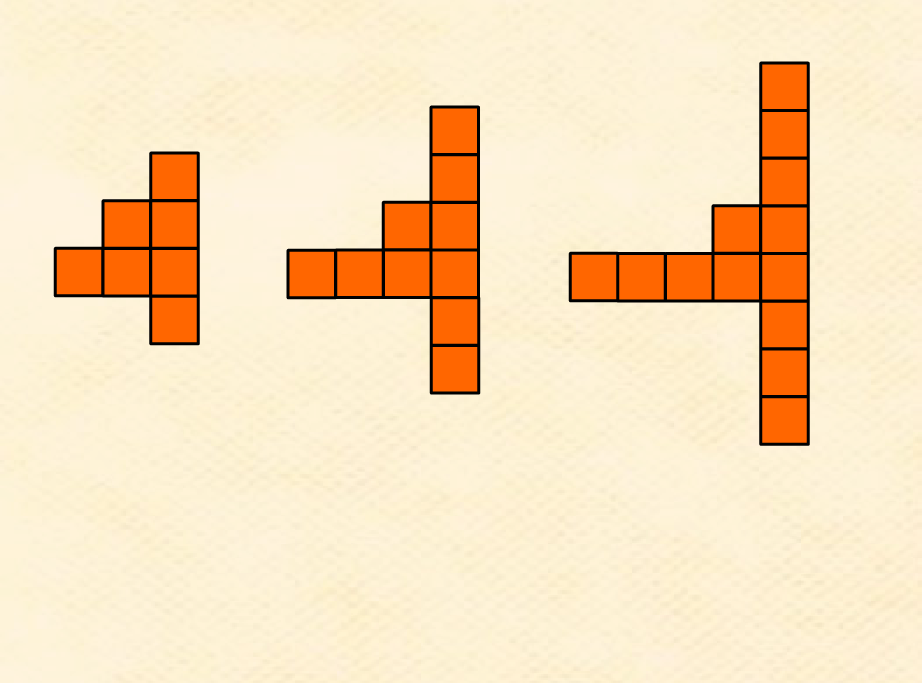
6. Draw steps 0, 1, 2, and 3 of a pattern whose rule is .

Don’t forget to connect the parts of your rule to the pattern you drew!

7. Draw steps 0, 1, 2, and 3 of a pattern whose rule is  .

Don’t forget to connect the parts of your rule to the pattern you drew!

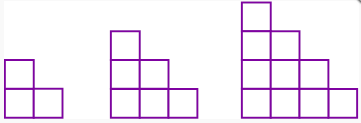
8. Which step number of this pattern had 199 squares? Show all of your thinking.



9. Determine the rule for each pattern below. Then, compare the patterns in #1 through #8 with these two. What’s similar / different about all of them?

(Use the back if you need more room.)

a)



b) (number of sticks)

